Amendments to the Claims

This listing of claims will replace all prior versions, and listings, of claims in the application:

Listing of Claims:

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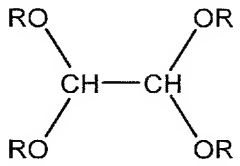
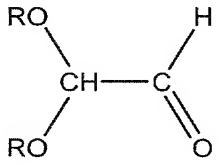
1. (Previously presented) Process for separation of a glyoxal diacetal of formula (I)



(I)

in which R represents a linear or branched C_1 - C_4 alkyl group, from a crude mixture comprising said glyoxal diacetal and a glyoxal monoacetal of formula (II)



(II)

in which R is as defined above, wherein at least one step of countercurrentwise liquid-liquid extraction of said glyoxal diacetal is carried out using a solvent which is immiscible

with the reaction medium, in order to obtain, on the one hand, a light phase comprising said glyoxal diacetal and, on the other hand, a heavy phase including the other constituents of the crude mixture.

2. (Previously presented) Process according to Claim 1, wherein said crude mixture comprises predominantly a glyoxal diacetal of formula (I) as defined in Claim 1, a glyoxal monoacetal of formula (II) as defined in Claim 1, and water.

3. (Currently amended) Process according to Claim 1 or Claim 2, ~~characterized in that~~ wherein the solvent is chosen from ethers, alkanes and aromatic hydrocarbons.

4. (Previously presented) Process according to claim 1, wherein the solvent is chosen from cyclohexane, n-heptane and toluene.

5. (Previously presented) Process according to claim 1, wherein the solvent/crude mixture ratio by weight is between 0.3/1 and 5/1.

6. (Previously presented) Process according to claim 1, wherein the extraction is carried out at a temperature of approximately 10°C to 60°C, preferably at ambient temperature.

7. (Previously presented) Process according to claim 1, wherein the light phase comprising the glyoxal diacetal of formula (I) and the solvent is subjected to a separation, on conclusion of which said glyoxal diacetal is recovered.

8. (Previously presented) Process according to Claim 7, wherein this separation is carried out by distillation under reduced pressure.

9. (Previously presented) Process according to 7 or 8, wherein this separation is carried out at a temperature of between ambient temperature and approximately 120°C.

10. (Currently amended) Process according to ~~any~~ claim 1, wherein the solvent is recycled to the liquid-liquid extraction step.

11. (Previously presented) Process according to claim 1, wherein the crude mixture is obtained by an acetalization reaction of 40 to 75% by weight aqueous glyoxal with an alcohol of formula R-OH in which R is as defined in Claim 1, the R-OH/glyoxal molar ratio being between 10/1 and 50/1, preferably 10/1 to 30/1, in the presence of an acid catalyst, followed by the distillation of the reaction mixture obtained in order to remove the excess alcohol R-OH.

12. (Previously presented) Process according to claim 1, wherein, in the formulae (I) and (II), R is a C_1-C_2 alkyl group.

13. (Previously presented) Process according to Claim 12, wherein R is a methyl group.

14. (Previously presented) Process according to claim 1, wherein the alcohol is methanol.

15. (Previously presented) Process according to claim 1, wherein the crude mixture comprises predominantly 1,1,2,2-tetramethoxy-ethane (TME), dimethoxyethanal (DME) and water.

16. (Previously presented) Process according to claim 1, wherein said mixture comprises, as percentages by weight, approximately 25 to 60% of TME, approximately 7 to 35% of DME and approximately 20 to 50% of water.

17. (Previously presented) Process according to claim 1, wherein said mixture also comprises, as percentages by weight, approximately 0 to 15% of glyoxal, approximately 0 to 10% of methanol and approximately 0 to 5% of impurities.

18. (Previously presented) Process according to claim 11, wherein the glyoxal used in the acetalization reaction is concentrated to approximately 60 to 70%.

19. (Previously presented) Process according to Claim 18, wherein the glyoxal is concentrated from an aqueous solution.

20. (Previously presented) Process according to claim 11, wherein the acetalization reaction is carried out for a period of time of less than or equal to 1 h, preferably of less than or equal to 40 min.

21. (Previously presented) Process according to Claim 20, wherein the period of time of the reaction is less than or equal to 20 min.

22. (Previously presented) Process according to claim 11, wherein the acetalization reaction is carried out at a temperature of the order of 60°C to 140°C, preferably approximately 80°C to 130°C.

23. (Previously presented) Process according to Claim 22, wherein the temperature is of the order of 100 to 130°C.

24. (Previously presented) Process according to claim 11, wherein the acetalization reaction is carried out at a pressure of greater than or equal to atmospheric pressure.

25. (Previously presented) Process according to Claim 24, wherein the pressure is less than or equal to 15 bar.

26. (Previously presented) Process according to claim 1, wherein the acetalization reaction, the liquid-liquid extraction step and the recovery of the various constituents of the crude mixture are carried out continuously, the glyoxal, the glyoxal monoacetal, the alcohol R-OH and the extraction solvent being recycled.